

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY H. SHERMAN and RICHARD T. TAYLOR

Appeal 2006-2994
Application 09/753,495
Technology Center 1700

Decided: January 5, 2007

Before CHUNG K. PAK, CATHERINE Q. TIMM, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims 4, 6-9, 11-13, 16-22, 25-28, 31, 32, 34-36 and 39-42, the only claims pending in this application. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 134.

INTRODUCTION

The claims are directed to a method of removing impurities/contaminants from used oil (Br. 7). The inventive method utilizes phase transfer catalysts to facilitate the transfer of inorganic or organic bases to the substrate in the used oil. According to Appellants, “[a] benefit of the claimed subject matter is that the only wastewater generated by the process is that which is originally present in the used oil and the small amount present in the base compound. (Br. 7 citing Specification 5: 13-18).

Claims 4 and 25 are illustrative:

4. A method for purifying used oil, comprising:

mixing a raw used oil with a base compound to form a mixture comprising used oil and base compound;

processing the mixture comprising used oil and base compound to provide an at least partially dehydrated used oil mixture comprising used oil and base compound;

adding a phase transfer catalyst to the at least partially dehydrated used oil mixture comprising used oil and base compound to provide a used oil mixture comprising used oil, phase transfer catalyst, and base compound, wherein the phase transfer catalyst comprises a glycol; and

removing contaminants from at least a portion of the used oil mixture comprising used oil, phase transfer catalyst, and base compound.

25. A method for removing contaminants from used oil, comprising:

mixing used oil with ethylene glycol in the presence of a base compound to provide a used oil mixture comprising used oil, ethylene glycol and base compound; and

distilling the used oil mixture comprising used oil, ethylene glycol and base compound at a temperature of about 200°C and a pressure of about 0.05 Torr to about 200 Torr.

The Examiner relies on the following prior art references to show unpatentability:

Norman	US 4,431,524	Feb. 14, 1984
Chavet	WO 9700928 ¹	Jan. 9, 1997

The rejections as presented by the Examiner are as follows:

1. Claims 4, 6, 11, and 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Norman.
2. Claims 7-9, 13, 16-22, 25-28, 31, 32, 34-36, and 39-42 are rejected under 35 U.S.C § 103(a) as unpatentable over Norman in view of WO '928.
3. Claims 25-28, 31, 32, 34-36, 41 and 42 are rejected under 35 U.S.C. § 103(a) as unpatentable over WO '928.

We reverse as to all three grounds of rejection.

OPINION

Claims 4, 6, 11, and 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Norman.

A reference is anticipatory within the meaning of § 102 if it discloses each and every claim limitation either expressly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997). Appellants traverse the Examiner's finding of anticipation on the basis that Norman does not disclose the final two steps of "adding a phase transfer catalyst" (e.g., ethylene glycol) and "removing contaminants" as recited in claim 4 (Br. 9). More specifically, Appellants argue that Norman completely removes the base compound prior to the addition of a glycol,

¹ Specific citations are to the U.S. equivalent, U.S. Patent No. 6,072,065, issued June 6, 2000 ("Chavet '065").

while the claimed invention requires the addition of glycol to a mixture comprising used oil and base compound. In support of their position, Appellants note that Norman performs the following process steps prior to the addition of glycol:

(1) contacting used oil with an aqueous solution of a basic salt to precipitate metal contaminants, polar compounds and/or particulates (i.e., "solid contaminants") and separating the solid contaminants and bulk water to provide a solids-free oil mixture. (Br. 9 citing Norman, col. 5, l. 16 through col. 6, l. 6),

(2) centrifuging the oil with the bulk water and solid contaminants removed to remove "fine particulates and remaining suspended water from the oil." (Br. 9 citing Norman, col. 6, ll. 21-25), and

(3) advancing the oil to a vacuum drier 22 to "remove dissolved water, light hydrocarbons, . . . and noncondensables, such as air, from the oil." (Br. 9 citing Norman, col. 6, ll. 54-58).

The Examiner maintains that despite these water removal steps, some base would still remain in the oil during Norman's glycol addition step (Answer 6). In support of his position, the Examiner notes that "nowhere in Norman is it indicated that all the base is removed in the water removal step" (Answer 5-6). In our view, the Examiner has improperly attempted to shift the burden of production to Appellants without first establishing a prima facie case of anticipation. *See In re King*, 801 F.2d 1324, 1327, 231 USPQ 136, 138 (Fed.Cir.1986) (burden shifts to appellant after the PTO establishes a prima facie case of anticipation).

The Examiner's position is essentially that Norman adds glycol to a mixture containing the same components recited in claim 4, i.e., oil and base

compound. However, the Examiner has not demonstrated that Norman's mixture "necessarily or inherently" includes the base compound. *See In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)("Where . . . the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product."). To the contrary, Appellants have noted several distinctions between their process and that of Norman which suggest that Norman's mixture is indeed devoid of base compound at the time of glycol addition. The Examiner fails to fully address these distinctions.

Accordingly, we find that the Examiner has failed to establish a prima facie case of anticipation. The rejection of claims 4, 6, 11, and 12 as anticipated by Norman is reversed.

Claims 7-9, 13, 16-22, 25-28, 31, 32, 34-36, and 39-42 are rejected under 35 U.S.C § 103(a) as unpatentable over Norman in view of WO '928 ("Chavet").

The Examiner relies on Norman for a disclosure of the process as claimed with the exception of the distillation step, the specifically claimed used oils containing light hydrocarbons, and the amounts of base or glycol (Answer 3). The Examiner relies on Chavet for a disclosure of a process for refining used oil comprising contacting the oil with an alkaline reactant in the presence of a solvent such as ethylene glycol and then removing contaminants by distillation (Answer 4). The Examiner maintains that it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the process of Norman by distilling to

remove contaminants as suggested by Chavet, because the mixture in Norman is similar to that of Chavet and, therefore, distilling would be expected to be an effective separation method in the process of Norman (Answer 4).

Appellants argue that, at best, the Examiner has established that it might have been “obvious-to-try” a distilling step in Norman’s process (Br. 11-12). According to Appellants, the used oils processed by Norman and Chavet are neither chemically nor physically similar (Br. 14). In particular, Appellants argue that Norman’s process is designed to treat industrial oils used in non-motor vehicle applications, while Chavet treats mixtures of oils in variable proportions originating from various origins. These mixtures may include industrial or engine lubricant oils containing various additives used to provide the required specific characteristics for the contemplated applications (Br. 13). Because of the differences in the starting oils, Appellants maintain that none of the mixtures at any step in the Norman or Chavet processes are physically or chemically similar (Br. 13). More specifically, the presence of water, hydrocarbons, and/or contaminants at the various stages of the respective processes changes the boiling point of the oil and solubility of the contaminants within the oil (Br. 13). Thus, Appellants assert that one of ordinary skill in the art at the time of the invention simply would not have been motivated to combine the various processes of Chavet and Norman in the manner claimed (Br. 13).

A proper analysis under § 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to one of ordinary skill in the art that he should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would

also have revealed that in so making or carrying out, one of ordinary skill would have a reasonable expectation of success. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). Both the suggestion and the reasonable expectation of success “must be founded in the prior art, not in the applicant's disclosure.” *Id.* Appellants have persuasively argued that, given the differences in the used oils treated by Chavet and Norman, one of ordinary skill in the art at the time of the invention would not have been motivated to combine their teachings to achieve the claimed invention. The Examiner is reminded that the burden is on the PTO to provide a detailed analysis of the prior art and reasons why one of ordinary skill in the art would have possessed the knowledge and motivation to make the claimed invention. *See In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). Merely stating that “each reference discloses used oils from industrial applications” (Answer 6) is not sufficient to meet this burden. At a minimum, the Examiner was obligated to comment on those portions of Norman and Chavet relied upon by Appellants to distinguish their respective mixtures (*see* Br. 12-13).

The rejection of claims 7-9, 13, 16-22, 25-28, 31, 32, 34-36, and 39-42 as unpatentable over Norman in view of WO ‘928 is reversed.

Claims 25-28, 31, 32, 34-36, 41 and 42 are rejected under 35 U.S.C. § 103(a) as unpatentable over WO ‘928.

The Examiner relies on Chavet for a disclosure of the invention as claimed with the exception of the specific distillation conditions and amounts of base or glycol. The Examiner essentially maintains that these features are result effective variables. Therefore, selection of appropriate

distillation conditions and amounts of base or glycol would have been obvious to one of ordinary skill in the art (Answer 5).

Appellants argue that Chavet does not teach, show, or suggest distilling a mixture comprising used oil, base compound, and phase transfer catalyst (or glycol), as required by the claims (Br. 14). Appellants direct us to Chavet '065 col. 4, lines 43-47² as evidence that Chavet's water wash step removes all of the base compound. The Examiner does not find this argument persuasive, maintaining that "at least traces of base must be present in the mixture that is distilled since it is unlikely that the washing step removes all of the base" (Answer 6).

As discussed above in connection with the first two grounds of rejection, the initial burden is on the Examiner to establish unpatentability. The Examiner has not demonstrated that the claimed invention and Chavet process are sufficiently similar such that Chavet's mixture would necessarily or inherently contain used oil, base compound, and phase transfer catalyst (or glycol) during distillation. Moreover, the Examiner fails to comment on those portions of Chavet which, as noted by Appellant, appear to teach the removal of all base compound. *See also* Chavet '065, col. 4, ll. 65-67 and col. 6, ll. 30-34.

The rejection of claims 25-28, 31, 32, 34-36, 41, and 42 as unpatentable over WO '928 is reversed.

² "This water washing operation . . . is essential to remove (1) any alkaline reactant in excess, (2) the alcohol if used as a solvent and (3) all water soluble by-products resulting from the alkaline reacted contaminants."

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The decision of the Examiner is reversed.

REVERSED

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